·	OIP	`\2		
Substit	ute form for	form	349A & 14	49Бл2 ⁵ ТО
INEC	DRMATI TEMEN	T BY	SCLC APPLI ets as nece	CANT
	use as mai	y Silet	is as nece.	33ary)
I Sheet		1	l of	4

•	Complete	
Application No.	09/721,749	
Filing Date	November 27, 2000	
First Named Inventor	Barwicz et al.	
Group Art Unit	2877	
Examiner Name	Unknown	
Attorney Docket No.	60-03 US CIP(2)	

-			U.	S. PATENT DOCUMENTS		
		U.S. Pate	nt Document		Date of	Pages, Columns, Lines
Examiner Initials*	Cite No. 1	Number	Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Publication of Cited Document MM-DD-YYYY	Where Relevant Passages or Relevant Figures Appear
		4,770,530		Van Aken et al.	Sept. 13, 1988	
		4,941,101		Crilly	July 10, 1990	
		4,968,143		Weston	Nov 6, 1990	
		5,020,910		Dunn et al.	June 4, 1991	
		5,247,175		Schoen et al.	Sept. 21, 1993	
		5,335,067		Prather et al.	Aug 2, 1994	
		5,369,481		Berg et al.	Nov 29, 1994	
		5,615,008		Stachelek	Mar 25, 1997	
	1					

FOREIGN PATENT DOCUMENTS								
		Foreign Patent Document			Date of Publication of	Pages, Columns, Lines Where		
Examiner Initials*	Cite No.	Office ³	Number⁴	Kind Code⁵ (if known)	Name of Patentee or Applicant of Cited Document	Cited Document MM-DB-YYYY	Relevant Passages or Relevant Figures Appear	T⁵
		JP	08210915		JASCO CORP.	08-20-1996		
		PCT	WO 92/14997		HELSINGIN MITTAKOJE OY	09-03-1992		

	OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*		T⁵
	Abreu E., Mitra S. K., Marchesani R.: "Non-minimum Phase Channel Equalization Using Non-causal Filters", <i>IEEE Trans. Signal Processing</i> , Vol. 45, No. 1, Jan. 1997, pp. 1-13.	
	Baldwin D. P., Jones R. W., McClelland J. F.: "Exploration of FTIR-based PAS for Onsite Analysis of Volatile Contaminants in Air", <i>Springer Ser. Opt. Sci.</i> , Vol.69, 1992, pp. 3-5.	
	Barwicz A., Ben Slima M., Massicotte D., Morawski R. Z., Thellen C.: "Improving Resolution of Analytical Instruments in Environmental Laboratories", Rec. IEEE Instr. & Meas. Technol. Conf IMTC 94 (Hamamatsu, Japan, May 10-12, 1994a), pp. 544÷547.	
	Barwicz A., Massicotte D., Savaria Y., Santerre MA., Morawski R. Z.: "An Integrated Structure for Kalman-Filter-Based Algorithms for Spectrophotometric Data Correction", <i>IEEE Trans. Instrum. & Meas.</i> , June 1994b, Vol. 43, No. 3, pp. 403-410.	
	Barwicz A., Massicotte D., Savaria Y., Pango P. A., Morawski R. Z.: "An Application-specific Processor Dedicated to Kalman-filter-based Correction of Spectrometric Data", <i>IEEE Trans. Instrum. & Meas.</i> , Vol. 44, No.3, June 1995, pp. 729-724.	

,	OIP	E	
E C	JUN O	2001	Ben Slima M., Morawski R. Z., Barwicz A.: "Spline-Base Variational Method with Constraints for Spectrophotometric Data Correction", <i>IEEE Trans. Instrum. & Meas.</i> , Dec. 1992, Vol. 41, No. 6, pp. 786÷790.
13,	JUN U	EMARY S	Ben Slima M., Szczecinski L., Massicotte D., Morawski R. Z., Barwicz A.: "Algorithmic Specification of a Specialized Processor for Spectrometric Applications", <i>Proc. IEEE Instrum. & Meas. Technology Conf. (Ottawa, Canada, May 19-21, 1997)</i> , pp. 90-95.
			Ben Slima M., Morawski R. Z., Barwicz A.: "Kalman-filter-based Algorithms of Spectrophotometric Data Correction - Part II: Use of Splines for Approximation of Spectra", IEEE Trans. Instrum. & Meas., Vol. 46, No. 3, June 1997, pp. 685-689.
-			Berkhout A. J.: Seismic Migration, Elsevier 1985.
			Blass W. E., Halsey G. W.: Deconvolution of Absorbtion Spectra, Agademic Press 1981.
_			Brown S. D., Bear Jr. R. S., Blank T. B.: "Chemometrics", Anal. Chem., Vol. 64, No. 12, 1992, pp.22R-49R,
			Brown S. D., Sum S. T., Despagne F.: "Chemometrics", Anal. Chem. Vol. 68, No. 12, 1995, pp. 21R-61R.
			Cadzow A.: "Blind Deconvolution wia Cumulant Extrema", Signal Processing Magazine, Vol. 13, No. 3, May 1996, pp. 24-42.
		-	Cichocki A., Unbehauen E.: Neural Networks for Optimization And Signal Processing". Wiley & Sons, 1993
			Clement R. E., Eiceman G. A., Koester C. J., "Environmental Analysis", Anal. Chem., Vol. 67, No. 12, 1995, pp. 22R-255R.
			Conzen JP., Bürck J., Ache HJ.: "Determination of Chlorinated Hydrocarbons in Water by Fiber-optic Evanescent Wave Spectroscopy and Partial Least Squares", Fresenius J. Anal. Chem., No.348, 1994, pp. 501-505.
			Crilly P. B.: "A Quantitive Evaluation of Various Iterative Deconvolution Algorithms", IEEE TransInstrum: &-Meas., Vol. 40, No. 3, June 1991, pp. 558-562.
			Davies J. E. D.: "The Use of Vibrational Spectroscopy in Water Analysis", Sci. Total Environ., No.135, 1993, pp 145-152.
			Demoment G.: "Image Reconstruction and Restoration: Overview of Common Estimation Structures and Problems", <i>IEEE Trans. Acoust., Speach & Signal Processing</i> , Vol. 37, No. 12, Dec. 1989, pp. 2024-2036.
			Dempsey R. J., Davis D. G., Buice R. G., Lodder R. A.: "Biological and Medical Applications of Near-Infrared Spectrometry", Applied Spectroscopy, Vol. 50, No. 2, 1996, pp. 18A-34A.
\ <u>.</u>	-		Fister III J. C., Harris J. M.: "Multidimensional Least Squares Resolution of Raman Spectra from Intermediates in Photochemical Reactions", <i>Anal. Chem.</i> , Vol. 67, No. 8, 1995a, pp.1361-1370.
			Fister III J. C., Harris J. M.: "Multidimensional Least Squares Resolution of Excited State Raman Spectra", Anal. Chem., Vol. 67, No. 4, 1995b, pp.701-709.
			Fraser R. D. B., Suzuki E.: "Biological Applications". In: Spectral Analysis - Methods and Techniques (ed by J. A. Balckburn), M. Dekker, 1970, pp. 171-211.
			Gilbert A.: "The Resolution of Bands in Spectroscopy" In: Analytical Applications of Spectroscopy II (ed. by Davies A. M. C., and Creaser C. S.), Royal Soc. Chem., Cambridge (UK), 1991, pp. 275-285.
			Gopel W., Hesse J., Zemel J.N_"Sensors - A comprehensive series", Volume 8, VCH\ Verlagsgesellschaft mbH, 1995, pp. 295-565 Goldberg, D. E.: Genetic Algorithms in Search, Optimization, and Machine Learning,
			Addison Wesley, 1989. Gonsalves R. A., Nisenson P.: "HST Image Processing: An Overview of Algorithms for
			Image Restoration", <i>Proc. SPIE</i> , Vol. 1567, 1991, pp. 294-307.

, and	
JUN 0 4 ZUUI	Goodman K. J., Brenna T.: "Curve Fitting for Restoration of Accuracy of Overlapping Heaks in Gas Chromatography / Combustion Ratio Mass Spectrometry", Andl. Chem., Vol.66, No. 8, 1994, pp. 1294-1301.
PANEMAR	Kalinowska A., Morawski R. Z., Łubianka T.: "Incorporation of the Positivity Constraint into a Cepstral Method of Measurand Reconstruction", Proc. XIII-th IMEKO World Congress, (Torino, Italy, Sept. 5-9, 1994), pp. 429-434.
	Kechter G. E., Achenbach J. D.: "Combined Linear and Homomorphic Deconvolutions for Processing Bandpass Measurements", <i>IEEE Trans. Signal Processing</i> , Vol. 39, No. 6, June 1991, pp. 1300-1304;
	Korenberg M. J., Parmann L. D.: "Orthogonal Approach to Time Series Analysis and System Identification", <i>IEEE Signal Process. Magazine</i> , Vol. 8 No. 3, July 1991, pp. 26-43.
	Korenberg M. J.: "Parallel Cascade Identification and Kernel Estimation for Nonlinear Systems", Annals of Biomedical Engineering, Vol. 19, 1991, pp. 429-455.
	Krauss T. P., Shure L., Little J. N.: Signal Processing Foolbox for Use with MATLAB - User's Guide, MathWorks Inc., 1994
	Kundur D., Hatzinakos D.: "Blind Image Deconvolution", Signal Processing Magazine, Vol. 13, No. 3, May 1996, pp. 43-64.
	Kunz, R.E., "Totally Integrated Optical Measuring Sensors", SPIE Proceedings, Vol.1587, 1991, pp. 98-113.
	Leahy R. M., Goutis C. E., "An Optimal Technique for Constraint-Based Image Restoration and Reconstruction", <i>IEEE Trans. Acoustics, Speech & Signal Process.</i> , Vol. 34, No. 6, Dec. 1986, pp. 1629-1642.
	Leung H., Haykin S.: "Detection and Estimation Using an Adaptive Rational Function Filter" <i>IEEE Trans. Signal Processing</i> , Vol. 42, No. 12, Dec. 1994, pp. 3366-3376.
	Li H., Qian W., Clarke P. P., Kallergi M.: "Neural Network for Maximum Entropy Restoration of Nuclear Medicine Images", Proc. IEEE Int. Conf. Acoustics, Speech & Signal Process ICASSP'93 (Minneapolis MN, OSA, April 27-30, 1993), Vol1, 1993, pp. 633-636.
	MacCarthy P., Klausman R.W., "Water Analysis", Anal. Chem. Vol.67, 1995, pp.525R-528R.
	Mantsh H. H., Casal H. L., Jones R. N.: "Resolution Enhancement of Infrared Spectra of Biological Systems". In: Analytical Chemistry Spectroscopy of Biological Systems, (ed. By Clark R. J. H., Hester R E.), Vol. 13, J. Wiley & Sons, 1986, pp. 1-46.
	Massicotte D., Morayski R. Z., Barwicz A.: "Efficiency of Constraining the Set of Feasible Solutions in Kalman Filter-Based Algorithms of Spectrophotometric Data Correction", Rec. IEEE
	Massicotte D., Morawski R. Z., Barwicz A.: "Incorporation of A Positivity Constraint Into A Kalman-Filter-Based Algorithm for Correction of Spectrometric Data", <i>IEEE Trans. Instrum. & Meas.</i> , Vol. 44, No. 1, Feb. 1995, pp. 2-7.
	Massicotte D., Morawski R. Z., Barwicz A.: "Kalman-filter-based Algorithms of Spectrometric Data Correction - Part I: An Iterative Algorithm of Deconvolution", IEEE Trans. Instrum. & Meas., Vol. 46, No. 3, June 1997, pp. 678-684.
	Mathews V. J.: "Adaptive Polynomial Filters", <i>IEEE Signal Process. Magazine</i> , Vol. 8, No. 3, July 1991, pp. 10-26.
	McDonald W. C., Erickson M. D., Abraham B. M., Robbat A.: "Developments and Applications of Field Mass Spectrometers", <i>Environ. Sci. Technol.</i> , Vol. 28, No. 7, 1994, pp. 336A-343A.
	Miękina A., Morawski R. Z.: "Regularized Differentiation of Measurement Data Using Apriori Information on Signal and Noise Spectra". <i>IEEE Trans. Instr. & Meas.</i> , Dec. 1990, Vol. 39, No. 6, pp. 824+826.
	Miękina A., Morawski R. Z., Podgórski A.: "Optimal Calibration of Dynamic Measurement Channels Using Spectral Method with Tikhonov Regularization". <i>Proc. 6th</i>

IPE	
O' Elos	IMEKO-TC+ Symp. on Intelligent Instr. for Remote and Or-site Measurements (Brussels, Belgium, May 12-13, 1993), pp. 97÷101.
JUN 0 & 2001 B	Miękina A., Morawski R. Z.: "Incorporation of the Positivity Constraint into a Tikhonov-method-based Algorithm of Measurand Reconstruction". Proc. IMEKO-TCI&TC7 Colloquium (London, UK, Sept. 8-10, 1993), pp. 299 - 304.
MANEW	Morawski R. Z., Podgórski A., Sutkowski K.: "Dynamic Calibration of Measurement Channels Using Algorithms of Non-differentiable Optimization". <i>IEEE Trans. Instrum. & Meas.</i> , Dec. 1992, Vol. 41, No. 6, pp. 881-884.
	Morawski R. Z., Ben Slima M., Milewski M., Barwicz A.: "Application of a Digital Signal Processor for Correction of Spectrophotometric Measurements", IEEE Trans. Instr. & Meas., June 1993, Vol. 43, No. 3, pp. 778+782.
	Morawski R. Z., Szczecinski L., Barwicz A. "Deconvcolution Algorithms for Instrumental Application - A Comparative Study", <i>Journal of Chemometrics</i> , Vol.9, No 1, 1995, pp.3-20.
	Morawski R. Z.: "Unified Approach to Measurand Reconstruction", IEEE Trans. Instrum. & Meas., April 1994, Vol. 43, No.2, pp. 226-231.
	Morawski R. Z., Podgórski A: "Dynamic Calibration Using Variational Algorithms Based on Entropy-like Criteria", Prod. XIII-th IMEKO World Congress, (Torino, Italy, Sept. 5-9, 1994), pp. 921-927.
	Morawski R. Z., Szczeciński L., Barwicz A.: "Deconvolu- tion Algorithms for Instrumental Applications - A Comparative Study", J. Chemometrics, 1995, Vol. 9, pp. 3-20.
	Niemax K., Zybin A., "Semiconductor Diode Lasers in Atomic Spectrometry", Analytical Chemistry, June 1, 1996, pp. 351A-356A
	Parker S. (Ed.): McGraw-Hill Encyclopedia of Chemistry, McGraw-Hill, 1983.
	Pavlovic M., Baranovic G., Lovrekovic D.: "Raman study of the Bending Band of Water", Spectrochim. Acta - Part A, Vol. 47a, 1991, pp. 897-906.
	Ramponi G.: "The Rational Filter for Image Smoothing" IEEE Signal Processing Letters, Vol. 3, No. 3, March 1996, pp. 63-65.
	Rose B., Leistiko O.: "End-fire Coupling Between a Buried Waveguide Structure and a Si Photodetector", SPIE Proceedings, v. 2686, 1996, pp. 175-181
	Saito N.: "Superresolution of Noisy Band-Limited Data by Data Adaptive Regularization and its Application to Seismic Trace Inversion". Proc. Rroc IEEE Int. Conf. Acoustics, Speech & Signal ProcessICASSP'90 (New Mexico, April 3-6, 1990), pp. 1237-1240.
	Sander D., Ducker O., Blume O., Muller J.: "An Optical Microspectrometer in SiON-slab Waveguides", SPIE Proceedings, v. 2686, 1996, pp. 100-107
	Seitz P., Leipold D., Kramer J., Raynor J.M.: "Smart Optical and Image Sensors Fabricated with Industrial CMOS/CCD Semiconductor Processes", SPIE Proceedings, vol. 1900, 1994, pp.21-30
	Szczeciński L., Morawski R. Z., Barwicz A.: "Variational Algorithms of Measurand Reconstruction Based on Entropy-Like Criteria", Rec. IEEE Instr. & Meas. Technol. Conf IMTC '94 (Hamamatsu, Japan, May 10-12, 1994), pp. 361÷363.
	Szczeciński I., Morawski R. Z., Barwicz A.: "Original-Domain Tikhonov Regularisation and Non-Negativity Constraint Improve Resolution of Spectrometric Analysis", <i>Proc. XIIIth IMEKO World Congress (Torino, Sept. 5-9, 1994)</i> , pp. 441÷446.
	Szczeciński L., Morawski R. Z., Barwicz A.: "Numerical Correction of Spectrometric Data Using a Bilinear Operator of Measurand Reconstruction", Proc. IEEE Instrum. & Meas. Technol. Conf IMTC'95 (Boston, MA, April 24-26, 1995), pp. 488-491.
	Szczeciński L., Morawski R. Z., Barwicz A.: "Quadratic FIR Filter for Numerical Correction of Spectrometric Data", Proc. IEEE Instrum. & Meas. Technol. Conf IMTC'96 (Brussels, June 4-6, 1996), pp. 1046-1049.
	Tekalp A. M., Kaufman H., Woods J. W.: "Identification of Image and Blur Parameters for the Restoration of Noncausal Blur", <i>IEEE Trans. Acoust., Speach & Signal Processing</i> ,

*

/

		Vol. 34, No. 12, 1986, pp. 963-972.	
NUL S	1	L Templeton I. M., Fallahi M., Erickson L.E., Chatenoud F., Koteles E.S., Champion H.G., He L.J., Barber: "Focused ion beam lithography of multiperiod gratings for a wavelength-flyision-multiplexed transmitter laser array", RPU - Journal of Vacuum Science and Echnology - Section B - Microelectronics Nanometer Structures, 1995, v.13, n.6, p.2722, p.	
THE TANK THE	ADEMARY	Théraulaz F., Thomas O. P.: "Complexometric Determination of Mercury (II) in Waters by Spectrophotometry of its Dithizone Complex", <i>Microchim. Act</i> a, Vol. 113, 1994, pp. 53-59.	,
		Treicher J. R., Fijalkowski I., Johnson C. R. Jr.: "Fraction- ally Spaced Equalizers", Signal Processing Magazine, Vol. 13, No. 3, May 1996, pp. 65-81.	
		Tribolet J. M.: "Applications of Short-Time Homomorphic Signal Analysis to Seismic Wavelet Estimation", <i>IEEE Trans. Acoustic, Speech & Signal Process.</i> , Vol. 26, No. 4, Aug. 1978, pp. 343-353;	
		Trombka J. I., Schmadebeck R. L.: "A Numerical Least-square Method form Resolving Complex Pulse-height Spectra". In: Spectral Analysis - Methods and Techniques (ed by J. A. Balckburn), M. Dekker, 1970, pp. 121-170.	
		Tseng ChH., Powers E. J.: "Application of Orthogonal-Search Method to Volterra Modeling of Nonlinear Systems", Proc IEEE Int. Conf. Acoustics, Speech & Signal Process ICASSP'93 (Minneapolis MN, USA, April 27-30, 1993), pp. 512-515.	
		Van Cittert P. H.: "Zum Einfluß der Spaktbreit auf die Intesitätsverteilung in Spektrallinien II", Z. Physik, Vol. 69, 1931, pp. 298-308	
		Wisniewski M., Morawski R.Z., Barwicz A., "Modeling a Microspectrometer for Numerical Correction of its Metrological Parameters", Conf. Proceedings, IEEE IMTC'97	
		Zerwakis M. E., Kwon T. M., "On the Application of Robust Functionals in Regularized Image Restoration", Proc IEEE Int. Conf. Acoustics, Speech & Signal Process ICASSP 93 (Minneapolis MN, USA, April 27-30, 1993), Vol. 5, pp. 289-292.	
		Zhuang X., Ostevold E., Haralick R. M., "A Differential Equation Approach to Maximum Entropy Image Restoration", <i>IEEE Trans. Acoustics, Speech & Signal Process.</i> , Vol. 35, No. 2, Feb. 1987, pp. 208-218	
		,	

		,
Examiner	Date	
Signature	Considered	

¹ Unique citation designation number. 2 See attached Kinds of U.S. Patent Documents. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.